

FORM PTO-1449 U.S. Department of Commerce Patent and Trademark Office	Docket No.: INVIT1220-1	Application No.: Unassigned 09/937112
	Applicants: Heyman et al.	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Filing Date: September 19, 2001	Group Art Unit: Unassigned

## U.S. PATENT DOCUMENTS

EXAM. INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
CW	AA	6,174,669B1	01/16/01	Hayashizaki et al.	435	6	11/20/96

## FOREIGN PATENT DOCUMENTS

EXAM. INITIALS		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)
CW	AB	98/56943	12/17/98	WO	C12P	19/34	No
CW	AC	98/55502	12/10/98	WO	C07K	5/00	No
CW	AD	98/20122	05/14/98	WO	C12N	15/10	No Abstract only
CW	AE	97/24455	07/10/97	WO	C12Q	—	No
CW	AF	96/34981	11/07/96	WO	C12Q	1/68	No Abstract only
CW	AG	96/19497	06/27/96	WO	C07K	14/07	No
CW	AH	1 018 549 A1	09/18/98	EP	C12N	15/10	No
CW	AI	0 625 572 A1	09/22/93	EP	C12N	15/10	No
CW	AJ	0 373 914 A2	12/13/89	EP	C12N	15/62	No

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)

CW	AK	Carninci, et al. "High-Efficiency Full-Length cDNA Cloning by Biotinylated CAP Trapper," <i>Genomics</i> , 37(3):327-36 (1996) Academic Press, Inc.
	AL	Carninci, et al. "High Efficiency Selection of full-length cDNA by Improved Biotinylated Cap Trapper," <i>DNA Research</i> , 4:61-66 (1997). Universal Academy Press.
	AM	DiGate and Marians, "Molecular Cloning and DNA Sequence Analysis of <i>Escherichia coli topB</i> , the Gene Encoding Topoisomerase III," <i>J. Biol. Chem.</i> 264(30):17924-17930 (1989). The American Society for Biochemistry and Molecular Biology, Inc.
	AN	Edery, et al., "An Efficient Strategy to Isolate Full-Length cDNAs Based on an mRNA Cap Retention Procedure (CAPture)," <i>Mol. Cell. Biol.</i> , 15(6):3363-3371 (1995). American Society for Microbiology.

Cynthia Ullrich

9/4/03

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CW	AO	Haghighat and Sonenberg. "eIF4G Dramatically Enhances the Binding of eIF4E to the mRNA 5'-Cap Structure," <i>J. Biol. Chem.</i> , 272(35):21677-21680 (1997). The American Society for Biochemistry and Molecular Biology, Inc.
CW	AP	Haghighat et al., "The eIF4G-eIF4E Complex is the Target for Direct Cleavage by the Rhinovirus 2A Proteinase," <i>J. Virol.</i> 70:8444-8450 (1996). American Society for Microbiology.
CW	AQ	Invitrogen Corporation. <i>Invitrogen Catalog</i> , Carlsbad, California, pages 18, 29, 43, 44, 49-52 (1998).
CW	AR	Kato, et al., "Construction of a Human Full-Length cDNA Bank," <i>Gene</i> . 150: 243-250 (1994) Elsevier Science.
CW	AS	Maruyama and Sugano, "Oligo-Capping: A Simple Method to Replace the Cap Structure of Eukaryotic mRNAs with Oligoribonucleotides," <i>Gene</i> . 138:171-174 (1994).

Cynthia Wilder

9/4/03

FORM PTO-1449 U.S. Department of Commerce Patent and Trademark Office	Docket No.: INVIT1220-1	Application No.: 09/937,112
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### FOREIGN PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)
CW	WO 01/62892 A2	08/30/2001	PCT	<del> </del>	<del> </del>	

### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)


EXAMINER <i>Cynthia W. Walker</i>	DATE CONSIDERED <i>9/4/03</i>
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## U.S. PATENT DOCUMENTS

EXAM. INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
CW	AA	4,661,450	04/28/87	Kempe et al.			
CW	AB	4,800,159	01/24/89	Mullis et al.			
CW	AC	5,624,826	04/29/97	Kato, et al.			
CW	AD	5,766,891	06/16/98	Shuman			
CW	AE	5,958,681	09/28/99	Wetmur, et al.			
CW	AF	6,238,884 B1	05/29/01	Short et al.			
CW	AG	6,280,977 B1	08/28/01	Liang et al.			
CW	AH	6,291,213 B1	09/18/01	Rothstein			

## FOREIGN PATENT DOCUMENTS

EXAM. INITIALS		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)
CW	AI	85/04898	11/07/85	WO			
CW	AJ	0 373 914 A2	12/13/89	EP			
CW	AK	0 625,572 A1	09/22/93	EP			
CW	AL	94/29443	12/22/94	WO			
CW	AM	96/19497	06/27/96	WO			
<del>CW</del>	<del>AN</del>	<del>96/34981</del>	<del>11/07/96</del>	<del>WO</del>			
<del>CW</del>	<del>AO</del>	<del>97/24455</del>	<del>07/10/1997</del>	<del>WO</del>			
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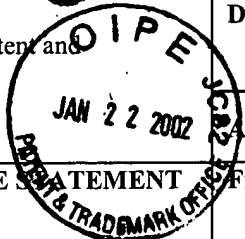
Cynthia W. Weller

DATE CONSIDERED

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Duplicate	<del>AQ</del>	<del>98/55502</del>	<del>12/10/98</del>	<del>WO</del>			
Duplicate	<del>AR</del>	<del>98/56943</del>	<del>12/17/98</del>	<del>WO</del>			
	AS	00/12687	03/09/00	WO	==	==	
	AT	00/56878	09/28/00	WO	==	==	

### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)

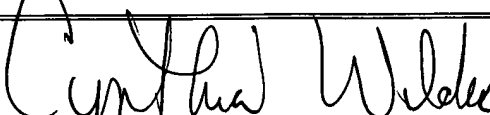
CW	AU	Carninci, et al. "High-Efficiency Full-Length cDNA Cloning by Biotinylated CAP Trapper," <i>Genomics</i> , 37(3):327-36 (1996) Academic Press, Inc.
	AV	Carninci, et al. "High Efficiency Selection of Full-Length cDNA by Improved Biotinylated Cap Trapper," <i>DNA Research</i> , 4:61-66 (1997). Universal Academy Press.
	AW	Cheng and Shuman, "DNA Strand Transfer Catalyzed by Vaccinia Topoisomerase: Ligation of DNAs Bontaining a 3' Mononucleotide Overhang," <i>Nucleic Acids Res.</i> , 28(9):1893-8. (2000). Oxford University Press.
	AX	Cheng and Shuman, "Recombinogenic Flap Ligation Pathway for Intrinsic Repair of Topoisomerase IB-Induced Double-Strand Breaks," <i>Mol. Cell. Biol.</i> 20(21):8059-8068 (2000) American Society for Microbiology.
	AY	Cheng and Shuman, "Site-Specific DNA Transesterification by Vaccinia Topoisomerase: Role of Specific Phosphates and Nucleosides," <i>Biochemistry</i> 38(50):16599-612 (1999) American Chemical Society.
	AZ	Cheng and Shuman, "A Catalytic Domain of Eukaryotic DNA Topoisomerase I," <i>J. Biol. Chem.</i> 273(19):11589-95 (1998) The American Society for Biochemistry and Molecular Biology, Inc.
	AAA	Cheng, et al., "Conservation of Structure and Mechanism Between Eukaryotic Topoisomerase I and Site-Specific Recombinases," <i>Cell</i> . 92(6):841-50 (1998) Cell Press.
	AAB	Cheng, et al., "Mutational Analysis of 39 Residues of Vaccinia DNA Topoisomerase Identifies Lys-220, Arg-223, and Asn-228 as Important for Covalent Catalysis," <i>J. Biol. Chem.</i> 272(13):8263-9 (1997) The American society for Biochemistry and Molecular Biology, Inc.

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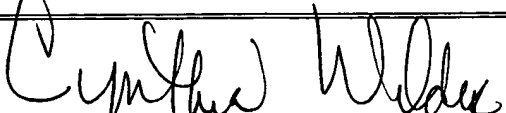
CW	AAC	DiGate and Marians, "Molecular Cloning and DNA Sequence Analysis of <i>Escherichia coli topB</i> , the Gene Encoding Topoisomerase III," <i>J. Biol. Chem.</i> 264(30):17924-17930 (1989). The American society for Biochemistry and Molecular Biology, Inc.
	AAD	Edery, et al., "An Efficient Strategy to Isolate Full-Length cDNAs Based on an mRNA Cap Retention Procedure (CAPture)," <i>Mol. Cell. Biol.</i> , 15(6):3363-3371 (1995). American Society for Microbiology.
	AAE	Ericsson, et al., "Characterization of ts 16, a Temperature-Sensitive Mutant of Vaccinia Virus," <i>J. Virol.</i> , 69(11):7072-86 (1995) American Society for Microbiology.
	AAF	Gross and Shuman, "Vaccinia Virions Lacking the RNA Helicase Nucleoside Triphosphate Phosphohydrolase II are Defective in Early Transcription," <i>J. Virol.</i> 70(12):8549-5 (1996) American Society for Microbiology.
	AAG	Haghighat and Sonenberg. "eIF4G Dramatically Enhances the Binding of eIF4E to the mRNA 5'-Cap Structure," <i>J. Biol. Chem.</i> , 272(35):21677-21680 (1997). The American society for Biochemistry and Molecular Biology, Inc.
	AAH	Haghighat et al., "The eIF4G-eIF4E Complex is the Target for Direct Cleavage by the Rhinovirus 2A Proteinase," <i>J. Virol.</i> 70:8444-8450 (1996). American Society for Microbiology.
	AAI	Henningfeld and Hecht, "A Model for Topoisomerase I-Mediated Insertions and Deletions with Duplex DNA Substrates Containing Branches, Nicks, and Gaps," <i>Biochemistry</i> 34(18):6120-9. (1995) American Chemical Society.
	AAJ	Invitrogen Corporation. <i>Invitrogen Catalog</i> , Carlsbad, California, pages 18, 29, 43, 44, 49-52 (1998).
	AAK	Janknecht, et al., "Rapid and Efficient Purification of Native Histidine-Tagged Protein Expressed by Recombinant Vaccinia Virus," <i>Proc. Natl. Acad. Sci., U S A</i> 88:8972-8976(1991) National Academic of Sciences.
	AAL	Kane and Shuman, "Vaccinia Virus Morphogenesis is Blocked by a Temperature-Sensitive Mutation in the I7 Gene that Encodes a Virion Component," <i>J. Virol.</i> 67(5):2689-98 (1993) American Society for Microbiology.

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CW	AAM	Kato, et al., "Construction of a Human Full-Length cDNA Bank," <i>Gene</i> . 150: 243-250 (1994) Elsevier Science.
	AAN	Klemm, et al., "Peptide Inhibitors of DNA Cleavage by Tyrosine Recombinases and Topoisomerases," <i>J. Mol. Biol.</i> 299(5):1203-16. (2000) Academic Press, Inc.
	AAO	Klemperer, et al., "Identification and Characterization of the orf Virus Type I Topoisomerase," <i>Virology</i> 206:203-215 (1995) Academic Press, Inc.
	AAP	Krogh and Shuman, "Vaccinia Topoisomerase Mutants Illuminate Conformational Changes During Closure of the Protein Clamp and Assembly of a Functional Active Site," <i>J. Biol. Chem.</i> July 5 2001 [Manuscript] The American Society for Biochemistry and Molecular Biology, Inc.
	AAQ	Krogh and Shuman, "Catalytic Mechanism of DNA Topoisomerase IB," <i>Mol. Cell.</i> 5(6):1035-41 (2000) Cell Press.
	AAR	Krogh and Shuman, "DNA Strand Transfer Catalyzed by Vaccinia Topoisomerase: Peroxidolysis and Hydroxylaminolysis of the Covalent Protein-DNA Intermediate," <i>Biochemistry</i> 39(21):6422-32. (2000) American Chemical Society.
	AAS	Krogh, et al., "Effect of 2'-5' Phosphodiesterases on DNA Transesterification by Vaccinia Topoisomerase," <i>J. Biol. Chem.</i> 276(24):20907-20912. (2001) The American Society for Biochemistry and Molecular Biology, Inc.
	AAT	Krogh, et al., "Melanoplus Sanguinipes Entomopoxvirus DNA Topoisomerase: Site-Specific DNA Transesterification and Effects of 5'-Bridging Phosphorothiolates," <i>Virology</i> 264(2):441-51. (1999) Academic Press, Inc.
	AAU	Liu, et al., "Mapping the 5' and 3' Ends of Tetrahymena thermophila mRNAs Using RNA Ligase Mediated Amplification of cDNA Ends (RLM-RACE)," <i>Nucleic Acids Research</i> 21(21): 4954-4960. (1993) The Oxford University Press.
	AAV	Lockard, et al., "Labeling of Eukaryotic Messenger RNA 5' Terminus with Phosphorus-32: Use of Tobacco Acid Pyrophosphatase for Removal of Cap Structures," <i>Gene Amplification and Analysis</i> 2:229-251. (1981) Elsevier Science.
	AAW	Maruyama and Sugano, "Oligo-Capping: A Simple Method to Replace the Cap Structure of Eukaryotic mRNAs with Oligoribonucleotides," <i>Gene</i> . 138:171-174 (1994).

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CW	AAX	Morham and Shuman, "Covalent and Noncovalent DNA Binding by Mutants of Vaccinia DNA Topoisomerase I," <i>J. Biol. Chem.</i> 267:15984-15992 (1992) The American Society for Biochemistry and Molecular Biology, Inc.
	AAY	Morham and Shuman, "Phenotypic Selection and Characterization of Mutant Alleles of a Eukaryotic DNA Topoisomerase I," <i>Genes. Dev.</i> 4(4):515-24 (1990) Cold Spring Harbor Laboratory Press.
	AAZ	Palaniyar, et al. "SFV Topoisomerase: Sequence Specificity in a Genetically Mapped Interval," <i>Virology</i> 221:351-354 (1996). American Press, Inc.
	BAA	Petersen and Shuman, "DNA Strand Transfer Reactions Catalyzed by Vaccinia Topoisomerase: Hydrolysis and Glycerololysis of the Covalent Protein-DNA Intermediate," <i>Nucleic Acids Res.</i> 25(11):2091-7 (1997) Oxford University Press.
	BAB	Petersen and Shuman, "Histidine 265 is Important for Covalent Catalysis by Vaccinia Topoisomerase and is Conserved in all Eukaryotic Type I Enzymes," <i>J. Biol. Chem.</i> 272(7):3891-6 (1997) The American Society for Biochemistry and Molecular Biology, Inc.
	BAC	Petersen et al., "Characterization of a DNA Topoisomerase Encoded by Amsacta Moore Entomopoxvirus," <i>Virology</i> 230(2):197-206 (1997) Academic Press, Inc.
	BAD	Petersen, et al., "Mutations within a Conserved Region of Vaccinia Topoisomerase Affect the DNA Cleavage-reLigation Equilibrium," <i>J. Mol. Biol.</i> 1263(2):181-95 (1996) Academic Press Limited.
	BAE	Salazar et al., "The DNA Strand in DNA.RNA Hybrid Duplexes is Neither B-Form nor A-Form in Solution," <i>Biochemistry</i> 32(16):4207-15 (1993) American Chemical Society.
	BAF	Schmitt, et al., "Affinity Purification of Histidine-Tagged Proteins," <i>Molecular Biology Reports</i> 18:223-230 (1993).
	BAG	Sekiguchi and Shuman, "Domain Structure of Vaccinia DNA Ligase," <i>Nucleic Acids Res.</i> 25(4):727-34 (1997) Kluwer Academic Publishers.
	BAH	Sekiguchi and Shuman, "Mutational Analysis of Vaccinia Virus Topoisomerase Identifies Residues Involved in DNA Binding," <i>Nucleic Acids Res.</i> 25(18):3649-56. (1997) Oxford University Press.
	BAI	Sekiguchi and Shuman, "Nick Sensing by Vaccinia Virus DNA Ligase Requires a 5' Phosphate at the Nick and Occupancy of the Adenylate Binding Site On the Enzyme," <i>J. Virol.</i> 71(12):9679-84 (1997) American Society for Microbiology.
	BAJ	Sekiguchi and Shuman, "Site-Specific Ribonuclease Activity of Eukaryotic DNA Topoisomerase I," <i>Mol. Cell.</i> 1(1):89-97.(1997) Cell Press.

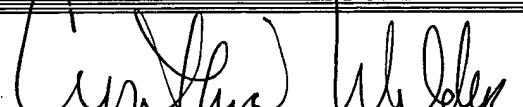
EXAMINER <i>Cynthia W. Miller</i>	DATE CONSIDERED <i>9/4/03</i>
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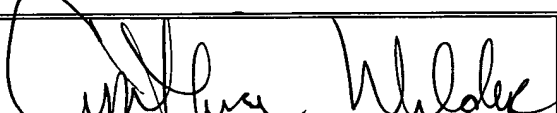
aw	BAK	Sekiguchi and Shuman, "Covalent DNA Binding by Vaccinia Topoisomerase Results in Unpairing of the Thymine Base 5' of the Scissile Bond," <i>J. Biol. Chem.</i> 271(32):19436-42 (1996). The American Society for Biochemistry and Molecular Biology, Inc.
	BAL	Sekiguchi and Shuman, "Identification of Contacts Between Topoisomerase I and Its Target DNA by Site-Specific Photocrosslinking," <i>EMBO J.</i> 15(13):3448-57 (1996) Oxford University Press.
	BAM	Sekiguchi and Shuman, "Proteolytic Footprinting of Vaccinia Topoisomerase Bound to DNA," <i>J. Biol. Chem.</i> 270(19):11636-45 (1995) The American Society for Biochemistry and Molecular Biology, Inc.
	BAN	Sekiguchi and Shuman, "Requirements for Noncovalent Binding of Vaccinia Topoisomerase I to Duplex DNA," <i>Nucleic Acids Res.</i> 22(24):5360-5 (1994) Oxford University Press.
	BAO	Sekiguchi and Shuman, "Stimulation of Vaccinia Topoisomerase I by Nucleoside Triphosphates," <i>J. Biol. Chem.</i> 269(47):29760-4 (1994) The American Society for Biochemistry and Molecular Biology, Inc.
	BAP	Sekiguchi and Shuman, "Vaccinia Topoisomerase Binds Circumferentially to DNA," <i>J. Biol. Chem.</i> 269(50):31731-4 (1994) The American Society for Biochemistry and Molecular Biology, Inc.
	BAQ	Sekiguchi, et al., "Resolution of a Holliday Junction by Vaccinia Topoisomerase Requires a Spacer DNA Segment 3' of the CCCTT/ Cleavage Sites," <i>Nucleic Acids Res.</i> 28(14):2658-63. (2000) Oxford University Press.
	BAR	Sekiguchi, et al., "Kinetic Analysis of DNA and RNA Strand Transfer Reactions Catalyzed by Vaccinia Topoisomerase," <i>J. Biol. Chem.</i> 272(25):15721-8 (1997) The American Society for Biochemistry and Molecular Biology, Inc.
	BAS	Sekiguchi, et al., "Mechanism of Inhibition of Vaccinia DNA Topoisomerase by Novobiocin and Coumermycin," <i>J. Biol. Chem.</i> 271(4):2313-22 (1996) The American Society for Biochemistry and Molecular Biology, Inc.
	BAT	Sekiguchi, et al., "Resolution of Holliday Junctions by Eukaryotic DNA Topoisomerase I," <i>Proc. Natl. Acad. Sci. U S A.</i> 93(2):785-9. (1996) National Academic of Sciences.
	BAU	Shuman, "Analysis of Topoisomerase-DNA Interactions by Electrophoretic Mobility Shift Assay," <i>Methods Mol. Biol.</i> 95:65-74(2001) Hunana Press, Inc.
	BAV	Shuman, "Polynucleotide Ligase Activity of Eukaryotic Topoisomerase I," <i>Mol. Cell.</i> 1(5):741-8. (1998) Cell Press.
	BAW	Shuman, "Vaccinia Virus DNA Topoisomerase: a Model Eukaryotic Type IB Enzyme," <i>Biochim. Biophys. Acta.</i> 1400(1-3):321-37. (1998) Elsevier Science.

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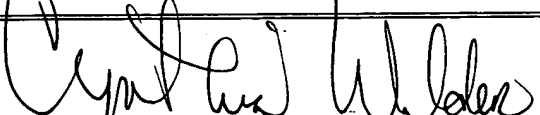
BAX	Shuman, "Vaccinia Virus DNA Ligase: Specificity, Fidelity, and Inhibition," <i>Biochemistry</i> 34:16138-16147 (1995) American Chemical Society.
BAY	Shuman, "Novel Approach to Molecular Cloning and Polynucleotide Synthesis Using Vaccinia DNA Topoisomerase" <i>J. Biol. Chem.</i> 269(51):32678-32684 (1994).
BAZ	Shuman, "DNA Strand Transfer Reactions Catalyzed by Vaccinia Topoisomerase I", <i>J. Biol. Chem.</i> 267:8620-8627. (1992) The American Society for Biochemistry and Molecular Biology, Inc.
CAA	Shuman, "Two Classes of DNA End-Joining Reactions Catalyzed by Vaccinia Topoisomerase I", <i>J. Biol. Chem.</i> 267:16755-16758. (1992) The American Society for Biochemistry and Molecular Biology, Inc.
CAB	Shuman, "Recombination Mediated by Vaccinia Virus DNA Topoisomerase I In Escherichia coli is Sequence specific," <i>Proc. Natl. Acad. Sci. U S A.</i> 88(22):10104-8 (1991) National Academic of Sciences.
CAC	Shuman, "Site-Specific DNA Cleavage by Vaccinia Virus DNA Topoisomerase I. Role of Nucleotide Sequence and DNA Secondary Structure," <i>J. Biol. Chem.</i> 266(3):1796-1803 (1991) The American Society for Biochemistry and Molecular Biology, Inc.
CAD	Shuman, "Site-Specific Interaction of Vaccinia Virus Topoisomerase I with Duplex DNA. Minimal DNA Substrate for Strand Cleavage in vitro," <i>J. Biol. Chem.</i> 266(17):11372-11379 (1991) The American Society for Biochemistry and Molecular Biology, Inc.
CAE	Shuman, "Vaccinia DNA Topoisomerase I Promotes Illegitimate Recombination in Escherichia coli," <i>Proc. Natl. Acad. Sci. U S A.</i> 86(10):3489-93 (1989) National Academic of Sciences.
CAF	Shuman and Moss, "Identification of a Vaccinia Virus Gene Encoding a Type I DNA Topoisomerase," <i>Proc. Natl. Acad. Sci., U S A</i> 84:7478-7482. (1987) National Academic of Sciences.
CAG	Shuman and Prescott. "Specific DNA Cleavage and Binding of Vaccinia Virus DNA Topoisomerase I" <i>J. Biol. Chem.</i> 265:17826-17836. (1990) The American Society for Biochemistry and Molecular Biology, Inc.

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FORM PTO-1449 U.S. Department of Commerce Patent and Trademark Office	Docket No.: INVIT1220-1	Application No.: 09/937,112
	Applicants: Heyman et al.	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Filing Date: September 19, 2001	Group Art Unit: Unknown

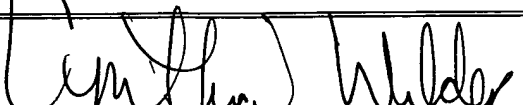
CAH	Shuman and Turner, "Site-Specific Interaction of Vaccinia Virus Topoisomerase I with Base and Sugar Moieties in Duplex DNA," <i>J. Biol. Chem.</i> 268(25):18943-50 (1993) The American Society for Biochemistry and Molecular Biology, Inc.
CAI	Shuman, et al., "Intramolecular Synapsis of Duplex DNA by Vaccinia Topoisomerase," <i>EMBO J.</i> 16(21):6584-9 (1997) Oxford University Press.
CAJ	Shuman, et al., "Insertional Mutagenesis of the Vaccinia Virus Gene Encoding a Type I DNA Topoisomerase: Evidence that the Gene is Essential for Virus Growth," <i>Virology.</i> 170(1):302-6 (1989) Academic Press, Inc.
CAK	Shuman, et al., "Mapping the Active-Site Tyrosine of Vaccinia Virus DNA Topoisomerase I," <i>Proc. Natl. Acad. Sci. U S A.</i> 86(24):9793-7 (1989) National Academic of Sciences.
CAL	Shuman, et al., "Characterization of Vaccinia Virus DNA Topoisomerase I Expressed in <i>Escherichia coli</i> ", <i>J. Biol. Chem.</i> 263:16401-16407. (1988) The American Society for Biochemistry and Molecular Biology, Inc.
CAM	Stivers, et al., "Stereochemical Outcome and Kinetic Effects of Rp- and Sp- Phosphorothioate Substitutions at the Cleavage Site of Vaccinia Type I DNA Topoisomerase," <i>Biochemistry</i> 39(18):5561-72. (2000) American Chemical Society.
CAN	Stivers et al., "Vaccinia DNA Topoisomerase I: Kinetic Evidence for General Acid-Base Catalysis and a Conformational Step," <i>Biochemistry</i> 33(51):15449-58 (1994) American Chemical Society.
CAO	Stivers, et al., "Vaccinia DNA Topoisomerase I: Single-Turnover and Steady-State Kinetic Analysis of the DNA Strand Cleavage and Ligation Reactions," <i>Biochemistry</i> 33(1):327-39 (1994) American Chemical Society.
CAP	Wang and Shuman, "Deletions at the Carboxyl terminus of Vaccinia DNA Topoisomerase Affect DNA Binding and Enhance Distributivity in DNA Relaxation," <i>Biochemistry</i> 36(13):3909-16 (1997) American Chemical Society.
CAQ	Wang, et al., "Mutational Analysis of 26 Residues of Vaccinia DNA Topoisomerase Identifies Ser-204 as Important for DNA Binding and Cleavage," <i>Biochemistry</i> 36(26):7944-50 (1997) American Chemical Society.

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<b>FORM PTO-1449</b> U.S. Department of Commerce Patent and Trademark Office	Rocket No.: INVIT1220-1	Application No.: 09/937,112
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Applicants: Heyman et al.	Group Art Unit: Unknown
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CW	CAR	Wexler, et al., "A Procedure to Amplify cDNA from dsRNA Templates Using the Polymerase Chain Reaction," <i>Methods in Molecular and Cellular Biology</i> 2:273-279 (1991).
	CAS	Wittschieben and Shuman, "Mechanism of DNA Transesterification by Vaccinia Topoisomerase: Catalytic Contributions of Essential Residues Arg-130, Gly-132, Tyr-136 and Lys-167," <i>Nucleic Acids Res.</i> 25(15):3001-8. (1997) Oxford University Press.
	CAT	Wittschieben and Shuman, "Mutational Analysis of Vaccinia DNA Topoisomerase Defines Amino Acid Residues Essential for Covalent Catalysis," <i>J. Biol. Chem.</i> 269(47):29978-83 (1994) The American Society for Biochemistry and Molecular Biology, Inc.
	CAU	Wittschieben, et al., "Replacement of the Active Site Tyrosine of Vaccinia DNA Topoisomerase by Glutamate, Cysteine or Histidine Converts the Enzyme into a Site-Specific Endonuclease," <i>Nucleic Acids Res.</i> 26(2):490-6. (1998) Oxford University Press.
	CAV	Woodfield, et al., "Vaccinia Topoisomerase and Cre Recombinase Catalyze Direct Ligation of Activated DNA Substrates Containing a 3'-Para-Nitrophenyl Phosphate Ester," <i>Nucleic Acids Res.</i> 28(17):3323-31 (2000) Oxford University Press.
	CAW	Yang, et al., "A Eukaryotic Enzyme that can Disjoin Dead-End Covalent Complexes Between DNA and Type I Topoisomerases," <i>Proc. Natl. Acad. Sci. U S A.</i> 93(21):11534-9 (1996) National Academic of Sciences.

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